# New Mexico Consortium works toward food and energy security

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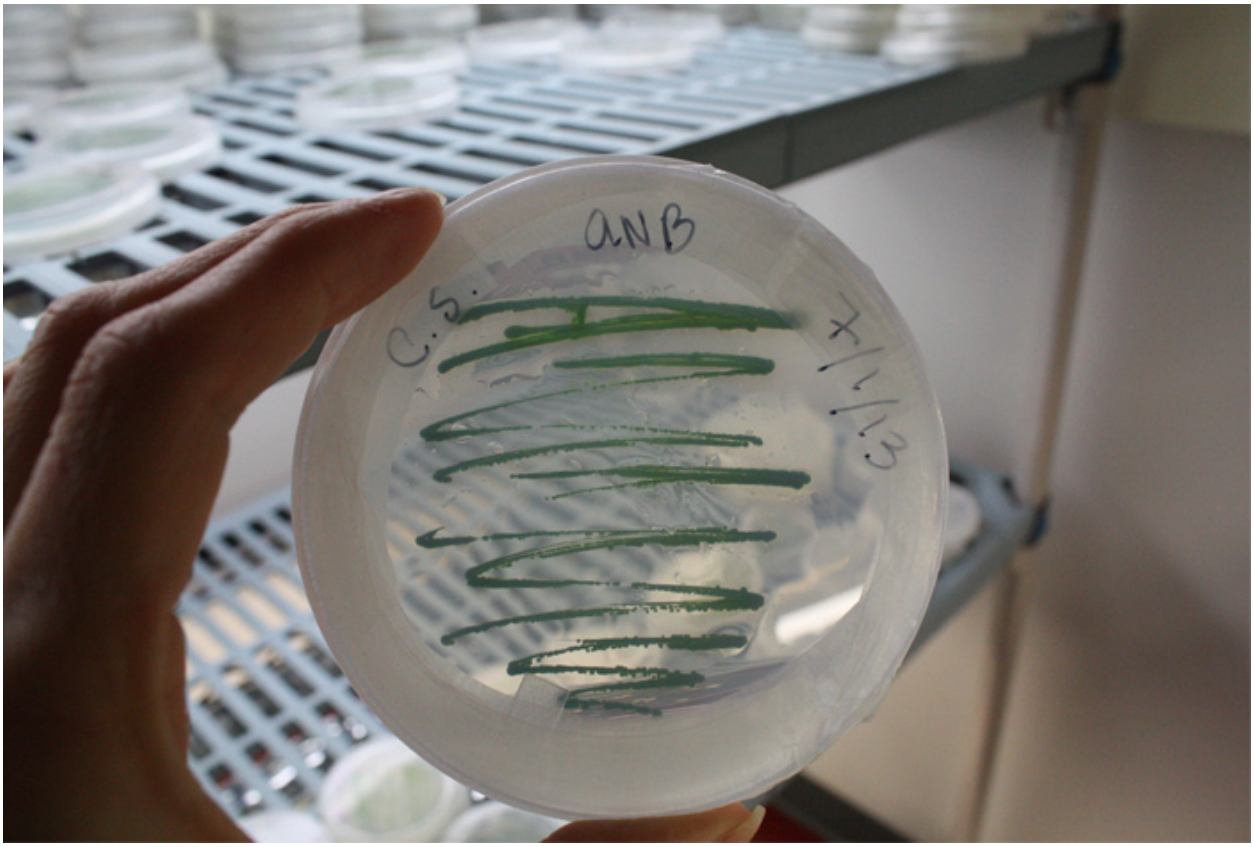


Helping feed the world and ensuring it has access to the energy it needs may be a lofty goal but those at the New Mexico Consortium (NMC) are working daily to help it become a reality. The Consortium, a nonprofit corporation established by the University of New Mexico, New Mexico State University and the New Mexico Institute of Mining and Technology, partners with the Lab to advance scientific research and education within the state on a number of cutting-edge endeavors.

Helping feed the malnourished

Among the work currently taking place at the NMC's brand-new facility on the edge of Los Alamos, is research to improve the cassava root as a food source. While the plant is consumed in sub-Saharan Africa due to its high level of carbohydrates and ease of cultivation (including drought resistance), it lacks important nutrients needed for human metabolism. Scientists at the Consortium seek to increase the root's bio-available zinc, iron and protein as well as vitamins A and E.

In addition, failure to properly prepare the root for consumption could make this food staple for millions of people actually hazardous to their health due to the presence of cyanogenic glycosides (cyanide). Researchers are working to develop cassava varieties that will increase and augment the good qualities of plant while dampening those that could cause harm.

Due to the complexity of the biogenetics involved, even once suitable traits are painstakingly introduced into the plants, the seeds must be grown and tested in the organization's labs and greenhouse under controlled conditions before partners elsewhere can ensure the plants will perform as needed in real-world environments.

Saving lives and protecting the environment

Since the whole purpose of the plants is to eventually leave the laboratory and grow elsewhere, NMC follows all U.S. Department of Agriculture requirements as well as those of the U.S. Food and Drug Administration that relate to foodstuffs, to help ensure there are no unintended consequences for people or the environment in the long run.

This work is funded in part by the Bill & Melinda Gates Foundation's Agricultural Development initiative under its Gates Foundation BioCassava Project.

Growing biofuels

Unlocking the energy within unicellular organisms and plants is a goal for renewable, green energy but the fuels produced need to be cost competitive to succeed. Toward this end, NMC is working in conjunction with the National Alliance for Advanced Biofuel and Bioproducts to build better algae and plants.

Biofuel from algae

Obtaining fuel from a source like algae requires finding efficiencies within every step of the production cycle. This includes the space it takes to grow the organisms, the amount of energy necessary to help it proliferate (from light, heat or another sources), how efficiently it can be harvested from its growth medium and the steps necessary to convert the cells' stored energy into a usable fuel.